Biometra
An Analytik Jena Company

TProfessional
Manager Software

User Manual

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2 Introduction

For the TProfessional Manager Software Biometra pursues the idea to provide a software that allows to control TProfessional thermocyclers in a powerful network. To achieve this goal an efficient control software has been developed and the concept for programming thermocyclers of the TProfessional line was integrated. The result is an easy to use software with intuitive operating interface as it is known from the TProfessional Thermocyclers themselves.

2.1 TProfessional Manager

The Biometra TProfessional Manager is a PC-Software that allows to install and to control a network of up to 5 Thermocyclers of the TProfessional series. With the Manager Software programs can be created, edited or saved and user directories and programs can be exchanged between the PC and the TProfessional Thermocyclers. The handling of the TProfessional Manager is based on the intuitive user interface of the Thermocyclers with the choice for tabular or graphical programming. For documentation of PCR runs detailed log-files with temperature data can be saved. If problems occur, in an extended self test Service Info Files are created that can be analysed by Biometra`s Service for rapid failure diagnosis.

3 Installation of the network

3.1 Content of delivery

1) TProfessional Manager Software and license file
2) Manual

3.2 Essential Components

For the installation of the network the following components are necessary:

1) Up to 5 TProfessional Thermocyclers
2) Up to 5 serial null modem cable with mode „full handshaking“, max. length up to 15 m
3) Up to 5 serial ports (COM-ports)
4) PC with Windows™ XP Service Pack 2 (SP2) or Vista operating system, 512 MB RAM
5) TProfessional Manager Software

3.3 Connecting TProfessional Thermocyclers to the PC

At first the connection of the TProfessional Thermocylers to the PC has to be established via a serial null modem cable with mode „full handshaking“. Attach the serial null modem cable to the RS232 serial port at the backside of the TProfessional Thermocycler:

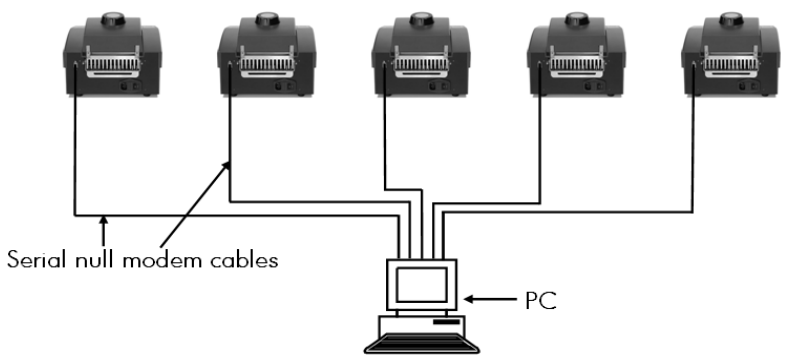
Note: Biometra offers null modem cables with mode „full handshaking“ (Ord. No. 050-821).

At second the connection to the PC is established by plugging the cable into the serial port at the computer.

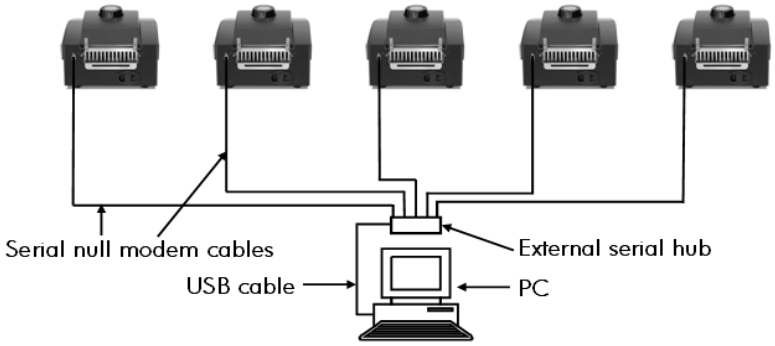
Note: In dependence on the number of TProfessional Thermocyclers to be connected an upgrade of the number of serial ports at the computer may be necessary. For this purpose internal PCI serial cards or external serial hubs may be used (recommended by Biometra). Biometra offers internal PCI serial cards with 4 ports or 8 ports (Ord. No. 050-822, 050-823).

The next pictures show possible configurations of a network with 5 TProfessional Thermocyclers by connection via an internal PCI serial card (A) or an external serial hub (B):

A) Configuration of a network with internal PCI serial card



B) Configuration of a network with external serial hub:



Note: The ports of an external serial hub are usually numbered (e.g. P1 to P8). The numbering of the ports installed in the Windows™ system corresponds the numbering of the serial port at the external hub (Chapter 7.1). E.g. port 1 at the hub corresponds to the first port installed for the external hub in the Windows™ system.

3.4 Installation of the TProfessional Manager Software

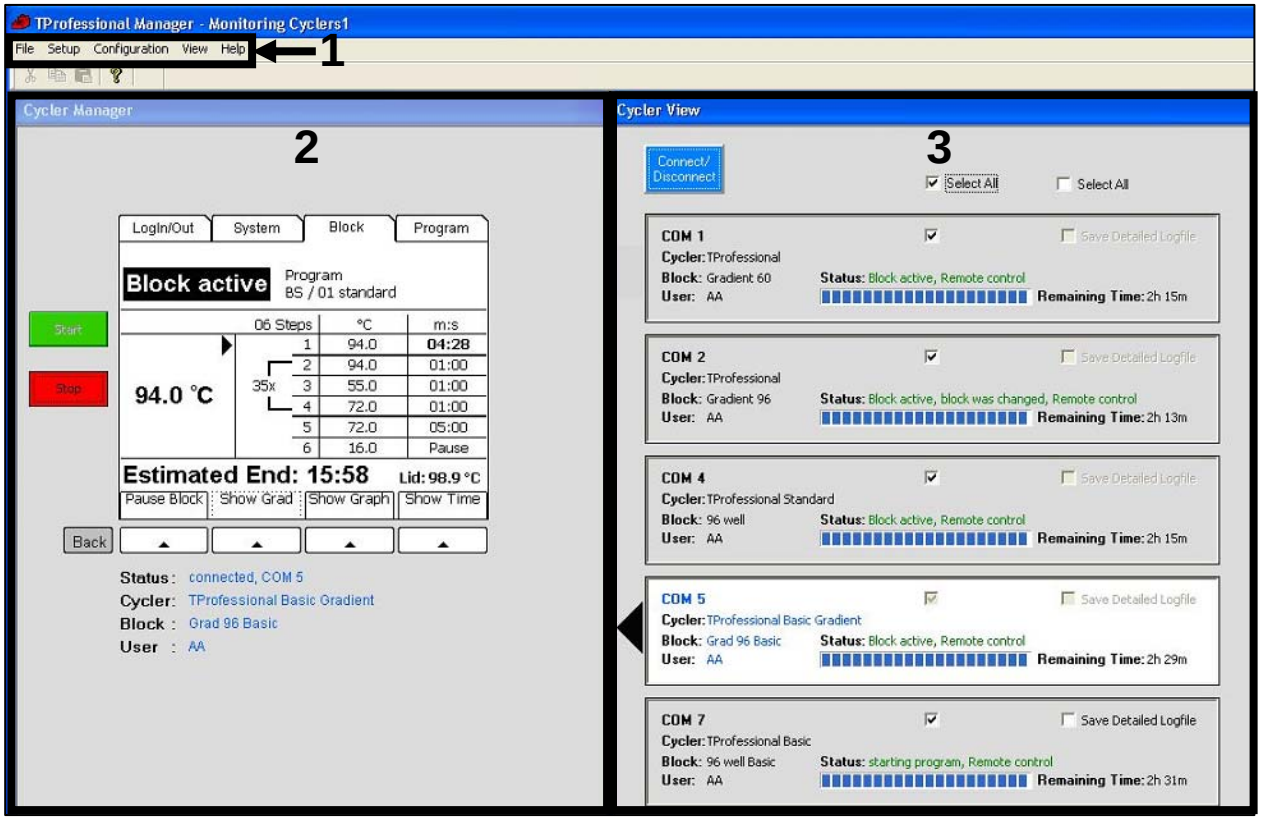
1. Open the file „SetupTProfManager200.exe“
   An Install Shield setup routine opens that guides through the installation process
2. Choose a setup language
3. Accept the license agreement
4. Enter your name and the name of your company or institute
5. Choose between complete and user defined installation
6. Optional: Change the directory the program is installed to
7. For user defined installation, select the files that will be installed. You can choose between the following components:
   a) TProfessional Manager Software for controlling TProfessional Thermocyclers
   b) Temperature Profile for the graphical display of temperature data from Detailed Log Files (see chapter 6.3.1 and 9)
   c) BiometraShared folder with pre-installed PCR programs
      - Directories
      - Programs

   If complete installation has been chosen, all files will be copied to the computer.
8. Press “Install” to start the installation
9. Copy the file "TProfManager.license" in the folder where you have installed TProfessional Manager. By standard the folder for the installation is: C:\Programs\Biometra\TProfessionalManager\.

Note: For unrestricted use the TProfessional Manager Software has to be activated by a license. Without a valid license the program can be opened and tested up to 20 times.

4 The TProfessional Manager Operating Interface

The operating interface of the TProfessional Manager is divided into three areas: The menu bar (1) at the top of the screen offers 4 different buttons. In the „Cycler Manager“ window (2) on the left a programming interface and a status view for the actually addressed Thermocycler are displayed. In the „Cycler View“ (3) window on the right the available serial ports and the connected TProfessional Thermocyclers are listed.



4.1 TProfessional Manager Menu Bar

The menu bar of the TProfessional Manager offers four buttons

- File
- Setup
- Configuration
- Display
- Help

The buttons can be activated by a single mouse click whereupon the menu items will be displayed.

4.1.1 File Menu

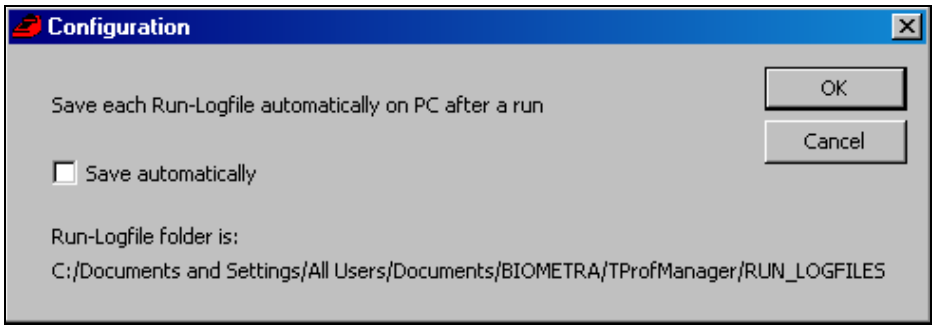
The file menu contains the menu item [Exit]. Clicking on [Exit] stops the TProfessional Manager and the window closes.

4.1.2 Setup Menu

Activating the setup menu automatically opens a new window where the configuration of serial ports can be defined (Chapter 5.1).

4.1.3 Configuration Menu

By clicking on the setup menu button a message window opens. When activating the check box “Save automatically” Run-Logfiles will be stored automatically in a preset folder for each run.



4.1.4 Display Menu

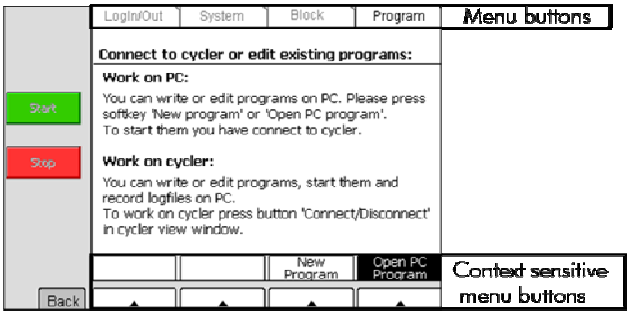
In the display menu the user can switch between the two windows ”Cycler Manager“ and „Cycler View“. In each case the active displayed window is tagged by a check mark in the menu.

4.1.5 Help Menu

The help menu offers information on the software [Manager Info] or useful hints for the use of the TProfessional Manager [Tips and Tricks].

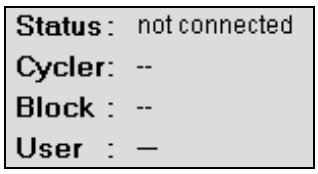
4.2 Cycler Manager Window

In the „Cycler Manager“ window a user interface like on the TProfessional Thermocyclers is integrated:

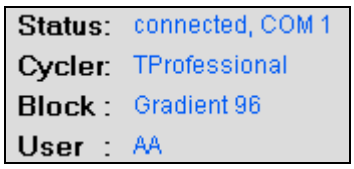

Login/Out
System
Block
Program
Menu buttons
Connect to cycler or edit existing programs:
Work on PC:
You can write or edit programs on PC. Please press softkey 'New program' or 'Open PC program'.
To start them you have connect to cycler.
Work on cycler:
You can write or edit programs, start them and record logfiles on PC.
To work on cycler press button 'Connect/Disconnect' in cycler view window.
Start
Stop
New Program
Open PC Program
Context sensitive menu buttons
Back

The menu navigation functions as it is described in the manuals of the TProfessional line. In contrast to the Thermocyclers the four buttons [Login/out], [System], [Block] and [Program] in the upper part of the operating interface and the context sensitive menu buttons and the [Back] button in the lower part can be activated by mouse clicks. Moreover the buttons [Start] and [Stop] to start and stop programs are clickable. To navigate in the inner user interface use the cursor keys and the return key of the PC keyboard. To enter numbers and characters also use the PC keyboard.
In the lower part of the „Cycler Manager“ window a status view display for the addressed Thermocycler is integrated:

a) Display if no Thermocycler is connected:



Display when Thermocycler is connected:



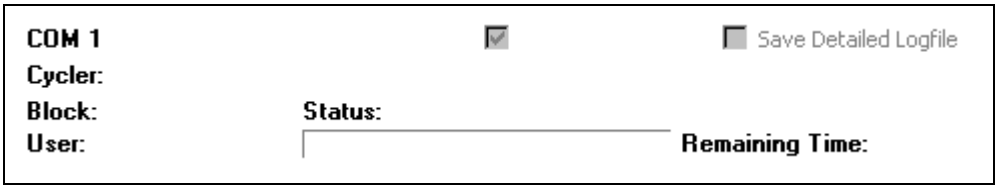
Status	serial port the Thermocycler is connected to
Cycler	instrument type
Block	block type used on the Thermocycler
User	logged-in user

As long as no Thermocycler is connected to the PC the message „not connected“ is displayed in the status view display (A.). As soon as a connection has been established, the actually addressed type of Thermocycler is displayed (B.).

4.3 Cycler View Window

The „Cycler View“ window displays a status message for each Thermocycler connected to a specific serial port:

C. Display if no Thermocycler is connected:



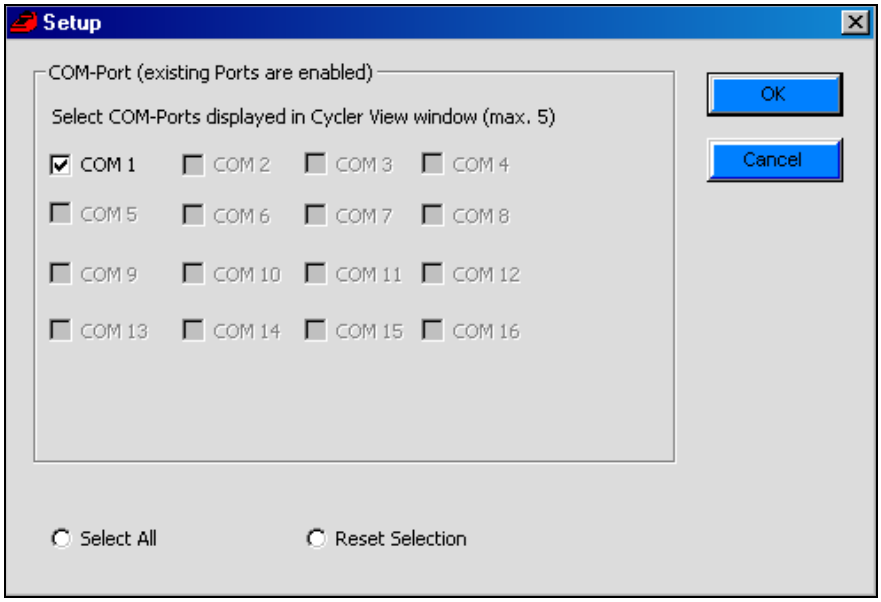
D. Display with connected Thermocycler:

1. COM Nr. — number of the addressed serial port
2. Cycler — instrument type
3. Block — block type used on the Thermocycler
4. User — logged-in user
5. Status
   a) nothing displayed — no Thermocycler connected
   b) Block free — Thermocycler free
   c) Block active, remote control — Thermocycler active, program runs
6. Remaining Time — remaining time to the end of a run

5 Addressing TProfessional Thermocyclers

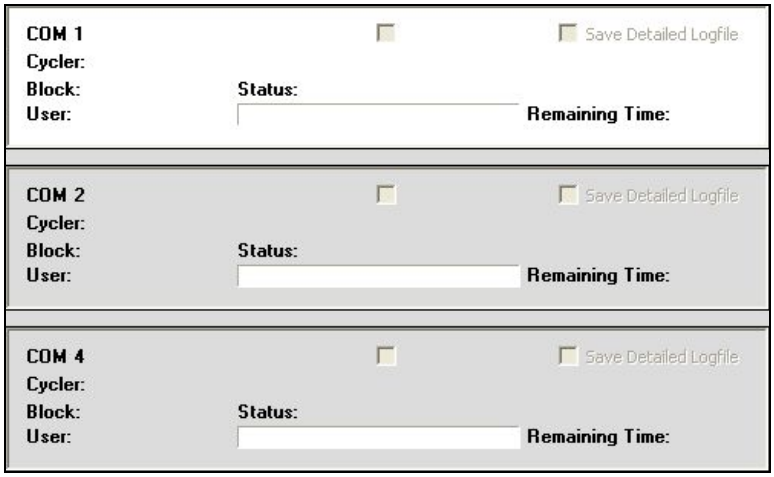
5.1 Initial installation of COM ports

After the network has been installed and the TProfessional Manager was started for the first time, there is no Thermocycler addressed by the software. In the „Cycler Manager“ window the status message „not connected“ is displayed (see chapter 4.2) and in the “Cycler View” window the status view bar of the serial port contains no entries (see chapter 4.3, picture C). Before Thermocyclers can be addressed by the PC first the configuration of COM ports has to be defined in the software.
Open the setup menu in the TProfessional Manager menu bar (see chapter 4.1.2). The TProfessional Manager Software automatically starts to read out the available serial ports. A new window opens were the serial ports addressed by the software can be defined. Only COM-ports that are installed at computer can be selected. For serial ports that are not available the corresponding check boxes appear in grey and cannot be selected.



Note: Depending upon the configuration of the network (see chapter 3.3) during the hardware installation process serial COM ports are registered in a numbered order by the PC. The TProfessional Manager Software supports up to 5 the serial COM ports.

Select the appropriate serial ports by activating single check boxes or by activating the button <Select All> and confirm with [OK]. For each selected serial port a status view bar is displayed in the window „Cycler View“ (up to max. 5 ports):

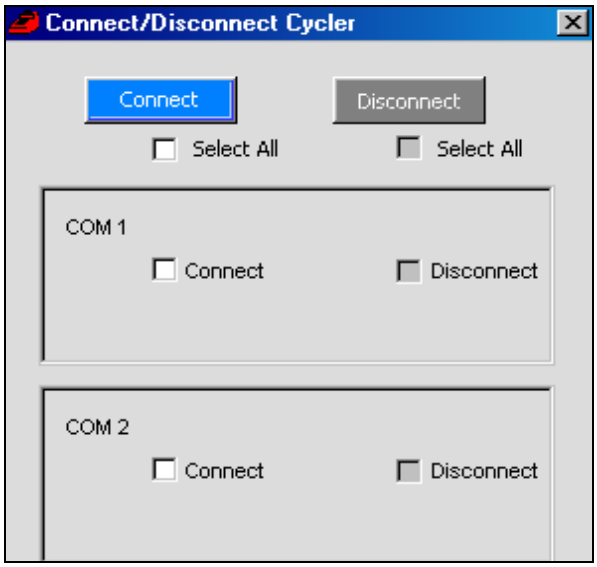


The configuration of the serial ports is only necessary for the first start of the network or when the configuration of the network is changed. The TProfessional Manager Software saves the configuration and loads it when the program is started again.

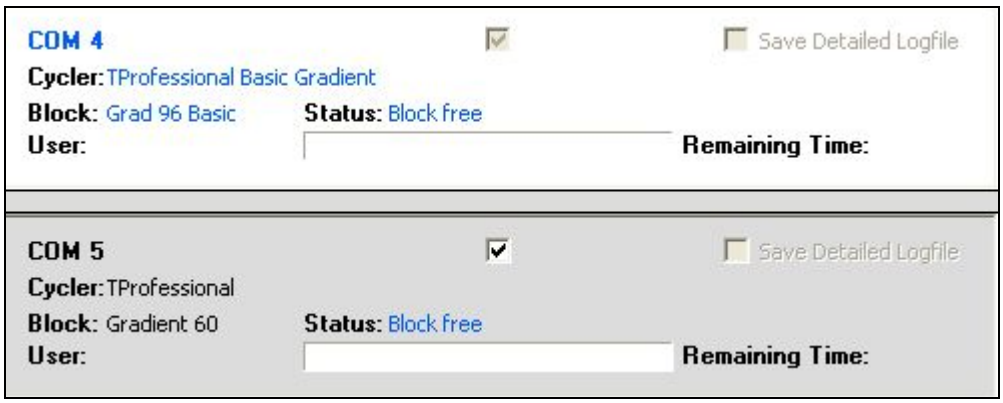
Note: If the following message should appear: „Cycler on COM Port number xx not available!“, please read chapter 7.3.

5.2 Establish a connection to TProfessional Thermocyclers

Press the button <Connect/Disconnect> in the „Cycler View“ window of the TProfessional Manager if you would like to establish a connection of the Manager Software to the Thermocyclers. The „Connect/Disconnect“ window opens:



Activitate the check box <Connect> for each serial port you would like to connect or select all serial ports to be connected by activating the check box <Select All>. Press the button <Connect>. The „Connect/Disconnect“ window is closed by the TProfessional Manager and subsequently the connected TProfessional Thermocyclers are displayed in the „Cycler View“ window:



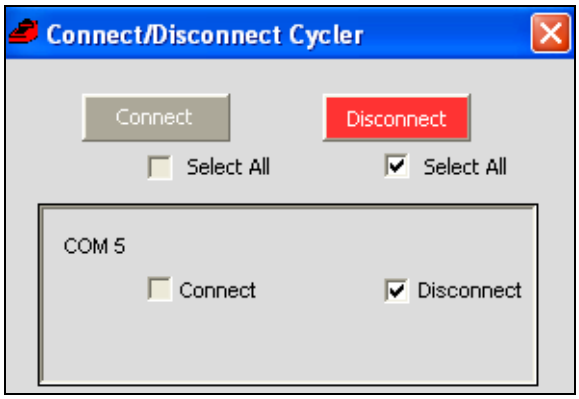
The field for the actively addressed Thermocycler appears with a white background. Furthermore a black arrow is displayed next to the field directing to the neighbouring window. In the „Cycler Manager“ window the status view for the actively addressed Thermocycler is displayed:

Note: If problems during the setup of serial ports should occur, in chapter 7.1 a comprehensive description how to check to configuration of serial ports at the computer is given.

Note: If you receive a message with error code 782 „*Cycler didn't answer: repeat procedure (!782!)*“ please read chapter 7.2 .

5.3 Disconnect TProfessional Thermocyclers

Press the button <Connect/Disconnect> in the „Cycler View“ window of the TProfessional Manager if you would like to disconnect TProfessional Thermocyclers. The window „Connect/Disconnect“ opens. Addressed Thermocyclers are detected automatically by the TProfessional Manager software.



Activate the check box <Disconnect> for each serial port you would like to disconnect or select all serial ports by activating the check box <Select All>. Press the button <Disconnect>. The

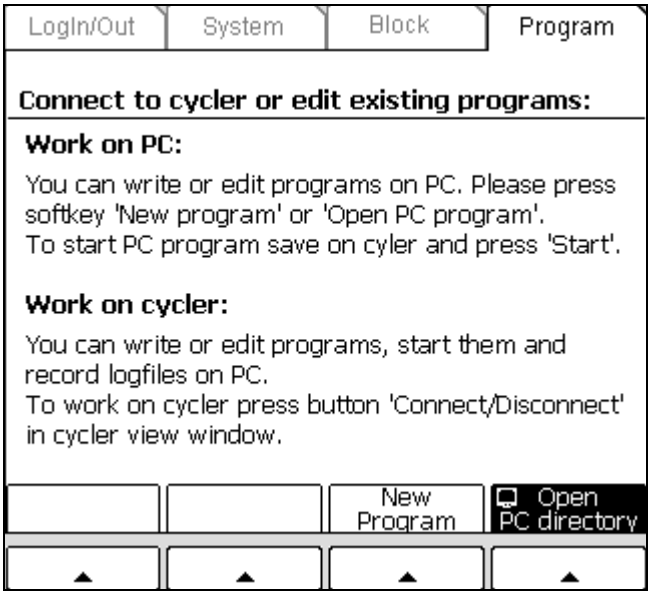
„Connect/Disconnect“ window is closed by the TProfessional Manager and the chosen Thermocyclers become disconnected.

6 Operating the TProfessional Manager

In principle the user interface of the TProfessional Manager is designed like the screen of the TProfessional Thermocyclers. Please read the corresponding chapters in the TProfessional Thermocycler manuals if you have basic question for the handling. Subsequently it is described to what extent the user interface of the TProfessional Manager differs from the display on the instruments and which additional functions are integrated in the software.

6.1 Start screen

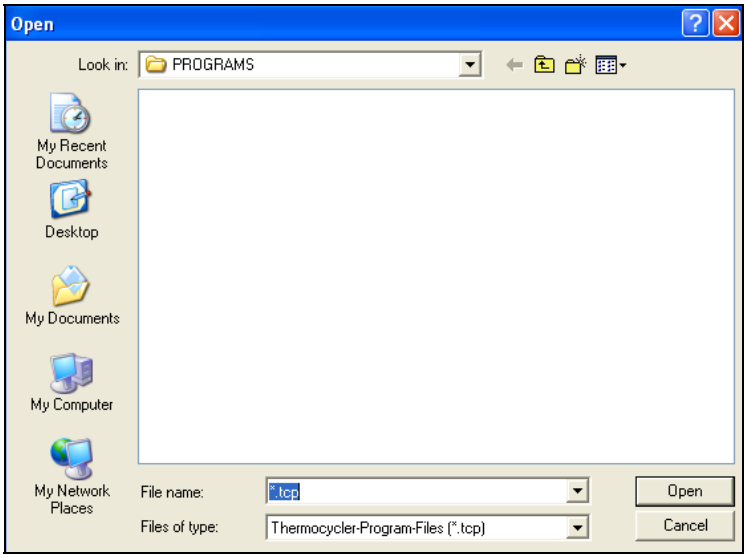
After the TProfessional Manager is started in the „Cycler View“ window the following start screen is shown:


LogIn/Out
System
Block
Program
Connect to cycler or edit existing programs:
Work on PC:
You can write or edit programs on PC. Please press softkey 'New program' or 'Open PC program'.
To start PC program save on cyler and press 'Start'.
Work on cycler:
You can write or edit programs, start them and record logfiles on PC.
To work on cycler press button 'Connect/Disconnect' in cycler view window.
New Program
Open PC directory

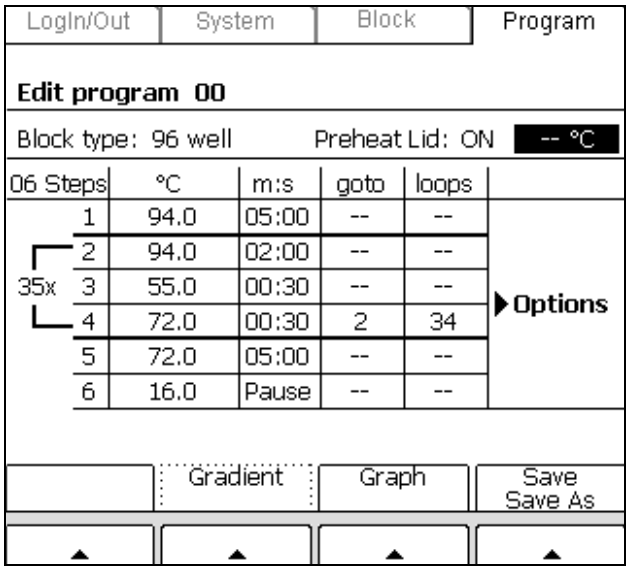
As long as there is no TProfessional Thermocycler connected to the PC the menu buttons [Login/Out], [System] and [Block] are inactive and are displayed in grey. The menu button [Program] is active and programs stored on the PC can be opened (Chapter 6.1.1) or new programs can be created and stored on the PC (Chapter 6.1.2).

6.1.1 Open a program stored on the PC

To open a program stored on the PC click on [Open PC directory] in the start screen of the TProfessional Manager (Chapter 6.1). The window “open” appears:



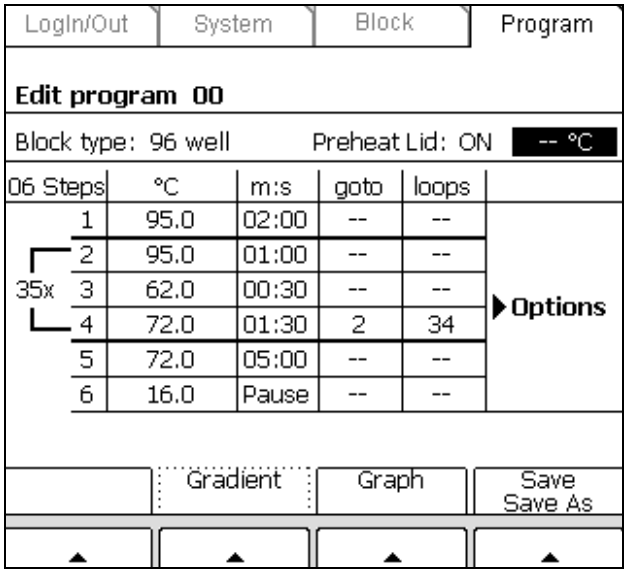
Select the program you would like to edit from the directory PROGRAMS and click on [Open]. In the user interface of the TProfessional Manager the opened program is displayed:



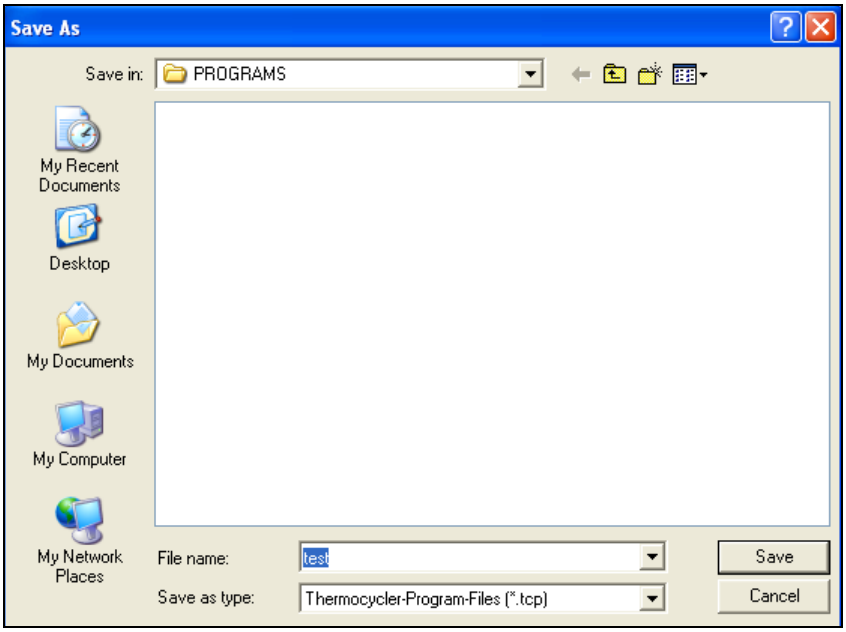
Note: The TProfessional Manager creates a folder PROGRAMS in the personal directory for each single user that is logged in to Windows™. Hence in the folder PROGRAMS only the stored programs of the currently logged in user are shown.

6.1.2 Create a new program

Click on [New Program] in the start screen of the TProfessional Manager (Chapter 6.1) to create a new program. Enter the new program. To save the program select [Save/Save As] in the user interface of the TProfessional Manager:



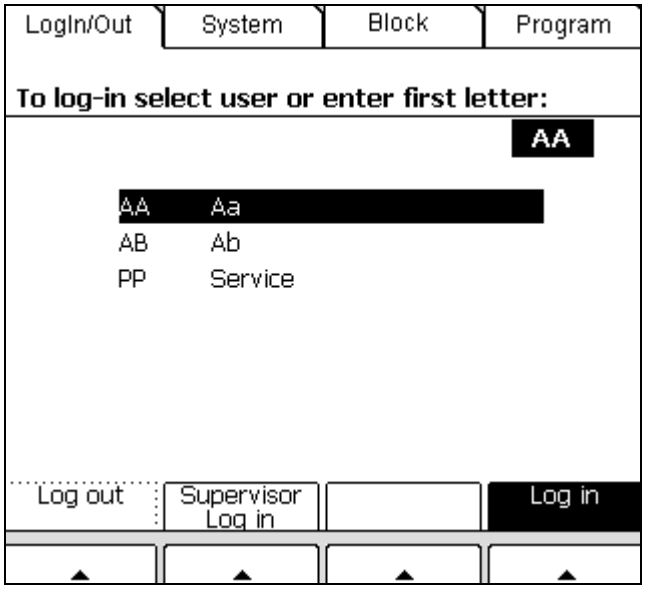
The window „Save as“ is opened. Enter a name for the program in the field [file name]. Press the button [Save] to save the program.



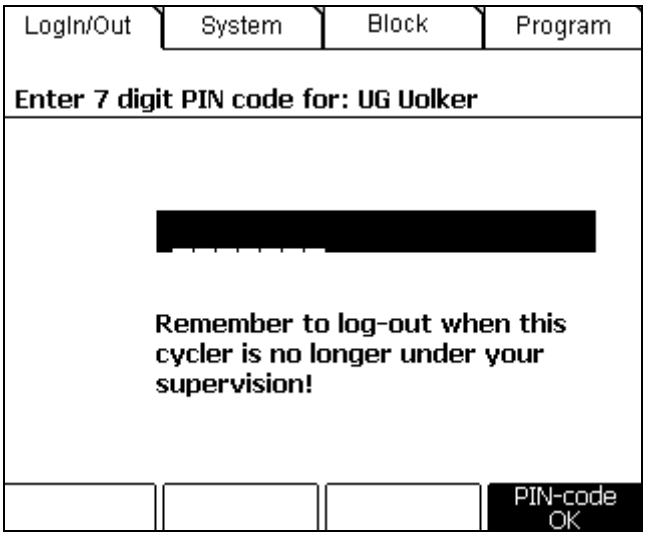
Note: The TProfessional Manager saves the new program with the file extension *.tcp (Thermocycler Program File) in the directory [PROGRAMS] of the Windows™ user account.

6.2 Log in Menu

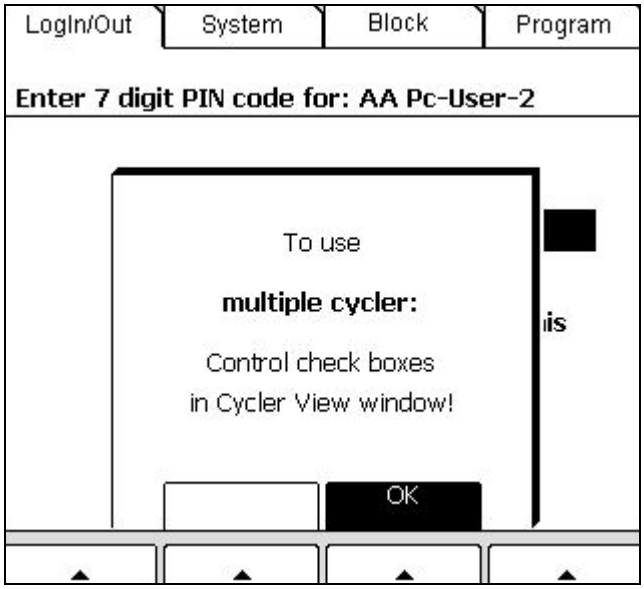
After connecting TProfessional Thermocyclers (Chapter 5.2) to the PC the start screen changes and the directory of the actually addressed thermocycler is displayed in the user interface of the TProfessional Manager. Moreover the menu buttons [Login/out], [Setup] and [Block] become activated and are clickable.
Select a user account from the list and click on [Log in] to log in. To log in as supervisor click on [Supervisor Log in].



In the following window enter the PIN-code and confirm with [PIN-code OK]:



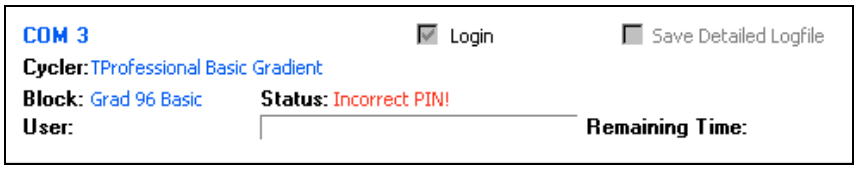
It appears a notification that in the „Cycler View“ window it can be defined to which connected TProfessional Thermocyclers the user can log in.



By activating/deactivating the check box [Login] in the status view of the “Cycler View” window you can select to which Thermocyclers you will log in. By routine on the start of the program the check boxes of all available TProfessional Thermocyclers are activated:

To confirm your selection press [OK] in the „Cycler Manager“ window.

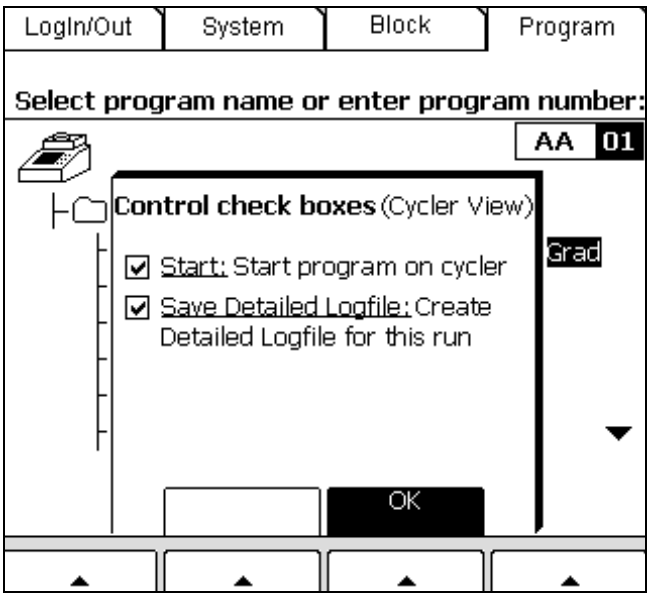
Note: If a false pin code is entered the message *Access denied, incorrect Pin* is shown in the ”Cycler Manager“ window and *Incorrect PIN!* in the Thermocycler status view in the „Cycler View“ window:



6.3 Start Program

When a program has been selected for start click on the button [Start] in the „Cycler Manager“ window:

The following message appears in the user interface:



To select the Thermocylers at which the program will be started activate/deactivate the check box [Start] for each Thermocycler in the “Cycler View” window:

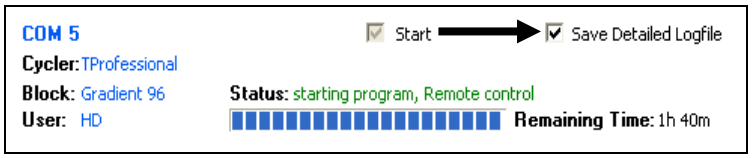
To confirm your selection press [OK] in the „Cycler Manager“ window.

Note: If a program is started on instruments via the TProfessional Manager Software and if it does not exist on the thermocyclers, it is saved at the designated store to the actually opened user directory. Existing programs will be overwritten. Therefore always make sure that no important programs are overwritten that you would like to keep. The most suitable practice is to save the program to a free store on the thermocycler before starting it.

Note: If a program is started on serveral different Thermocyclers, the program is, if necessary, adapted to the corresponding type of block/cycler.

6.3.1 Documentation of Detailed Log Files

The TProfessional Manager offers a feature for the documentation of detailed temperature data during a run. When using this feature each second a temperature profile for the thermoblock is recorded and saved by the software. Activate the check box [Save Detailed Logfile] in the „Cycler View“ window for each single Thermocycler a detailed log file shall be recorded:



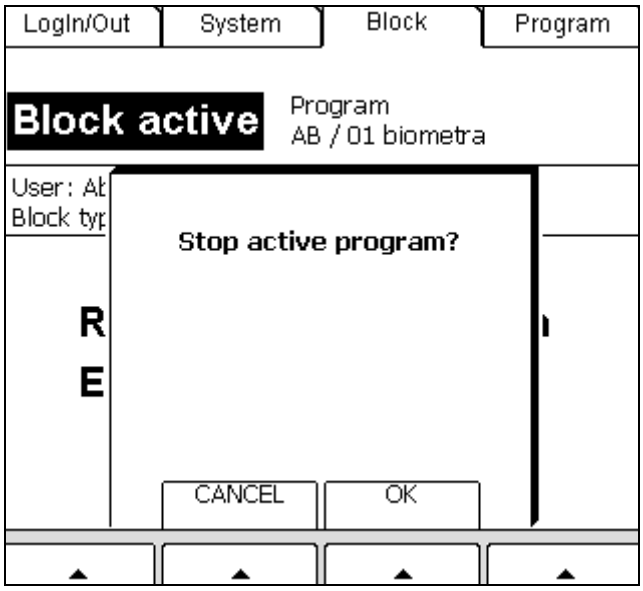
Start the program (Chapter 6.3).

Note: To analyse Detailed Logfiles you can use the file Temperature_profile.xls (see chapter 9) if the file has been copied to the computer during the installation of the TProfessional Professional Manager Software (see chapter 3.4).

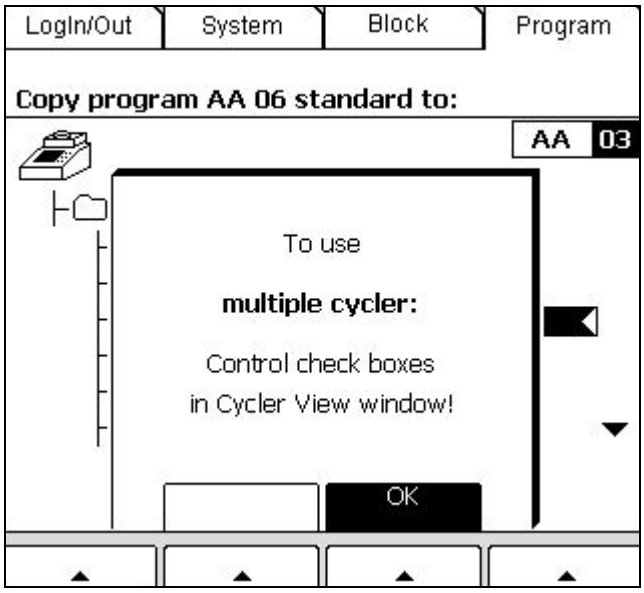
6.4 Stop Program

Press the button [Stop] in the „Cycler Manager“ window:

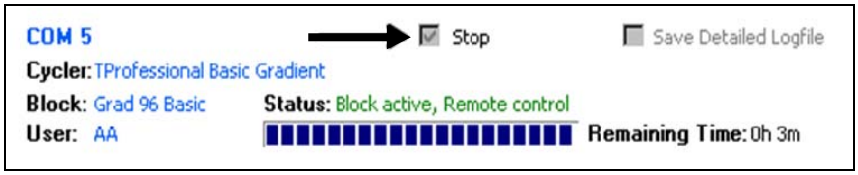
The following message is displayed in the user interface:



It appears a notification that in the „Cycler View“ window it can be defined at which connected TProfessional Thermocyclers the program will be stopped:



By activating/deactivating the check box [Stop] in the status view of the “Cycler View” window you can select at which Thermocyclers the program will be stopped:



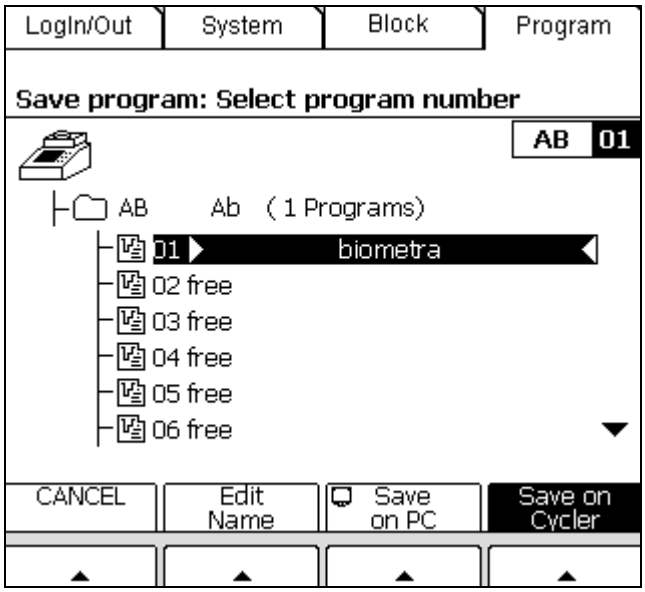
To confirm you selection press [OK] in the „Cycler Manager“ window.

6.5 Save Program

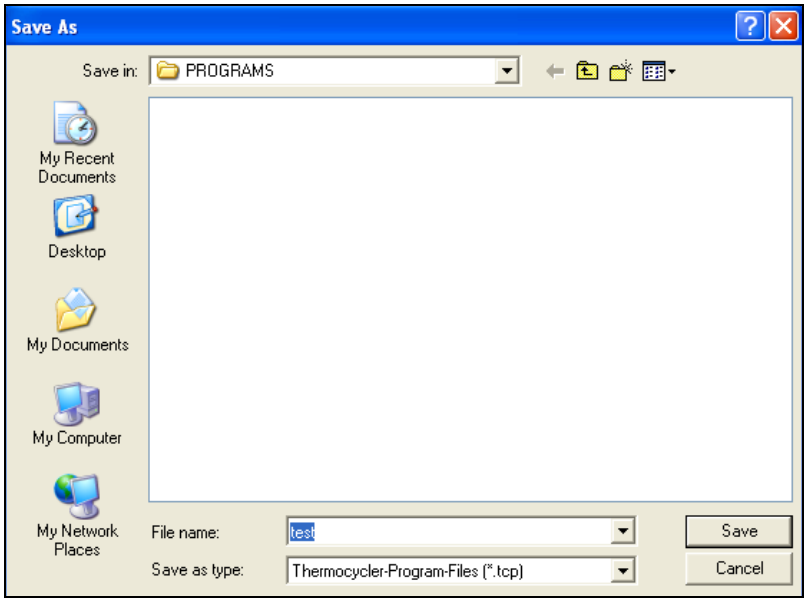
Created or edited programs can be saved on the PC or on each connected TProfessional Thermocycler.

6.5.1 Save Program on PC

Click on [Save on PC].



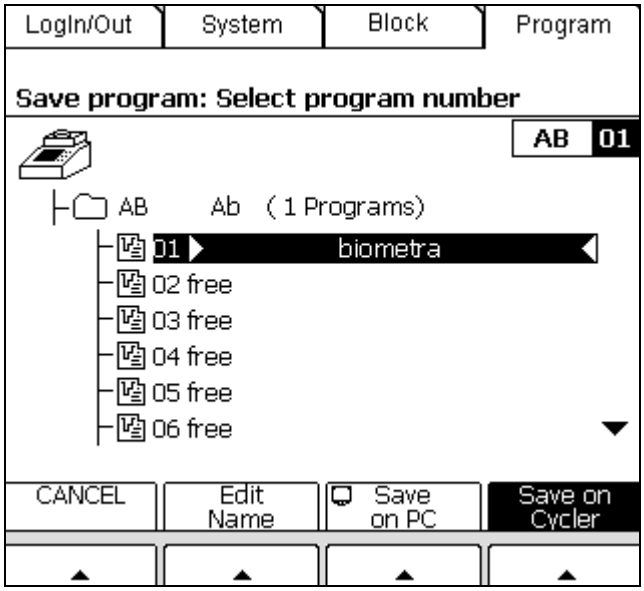
The dialog box „save as“ opens:



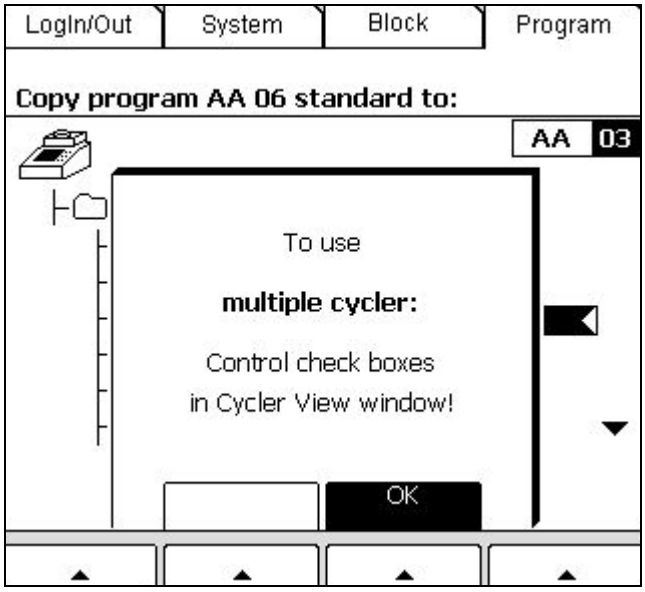
Enter a name for the program in the field [file name]. Press the button [Save] to save the program.

6.5.2 Save Program on Thermocyclers

Click on [Save on Cycler].



It appears a notification that in the „Cycler View“ window it can be defined at which connected TProfessional Thermocyclers the program will be saved:



By activating/deactivating the check box [Save] in the status view of the “Cycler View” window you can select at which Thermocyclers the program will be saved. By routine the check boxes of all available TProfessional Thermocyclers are activated:

To confirm you selection press [OK] in the „Cycler Manager“ window.

Note: If a program is saved from PC to Thermocyclers, programs occupying the same store will be overwritten. Therefore always make sure that no important programs are overwritten that you would like to keep.

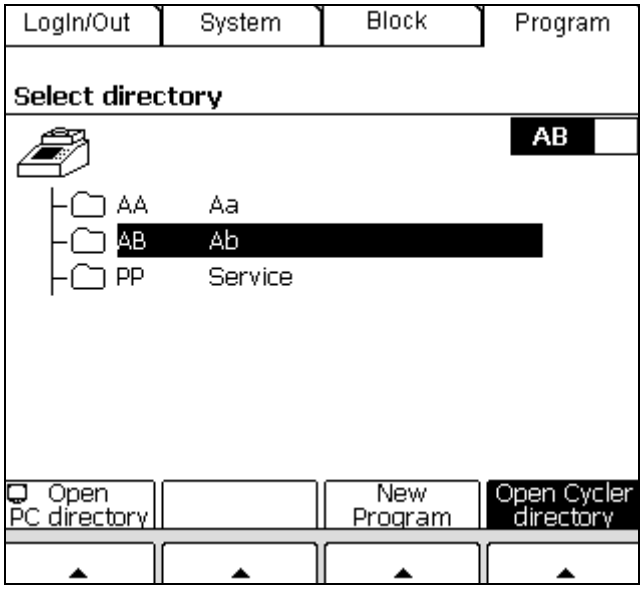
Note: If a program is saved on different thermocyclers, if necessary, it will be adapted to the corresponding block type or cycler type.

6.6 Open Directories

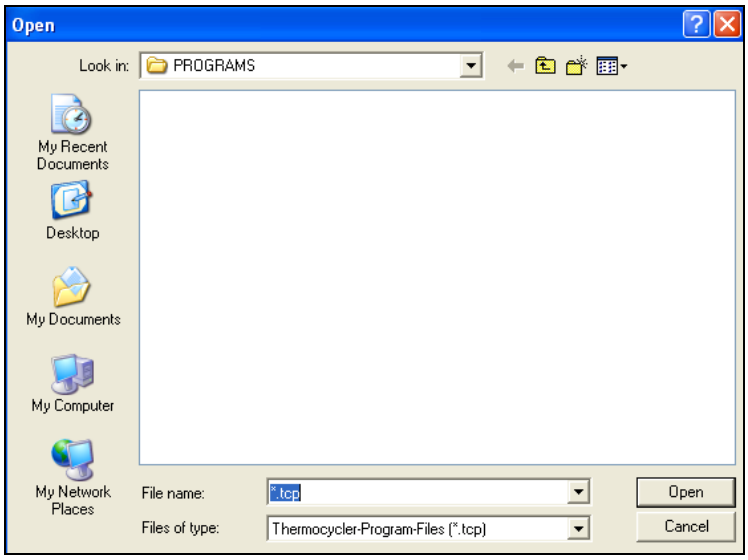
The TProfessional Manager Software allows to open directories saved on the PC or saved on the TProfessional Thermocyclers.

6.6.1 Open PC Directory

Click on [Program] in the menu of the TProfessional Manager user interface. To open your personal directory on the PC click on [Open PC Directory]:



The „Open“ window appears:



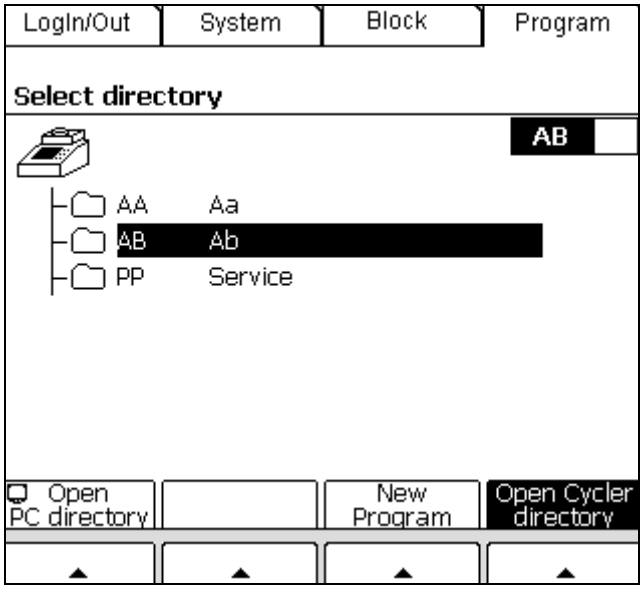
Select the program you would like to open in the directory PROGRAMS and click on [Open].

6.6.2 Open TProfessional Thermocycler Directory

To access a directory on a TProfessional Thermocycler the instrument has to be specifically addressed in the “Cycler View” window. The field for the actively addressed Thermocycler appears with a white background:

Note: You have only access to directories on Thermocyclers that are connected to the computer and addressed by the Manager Software.

Click on the button [Program] in the menu bar of the TProfessional Manager user interface. Click on [Open Cycler Directory] to open a directory on a Thermocycler:



6.7 Copy Directories

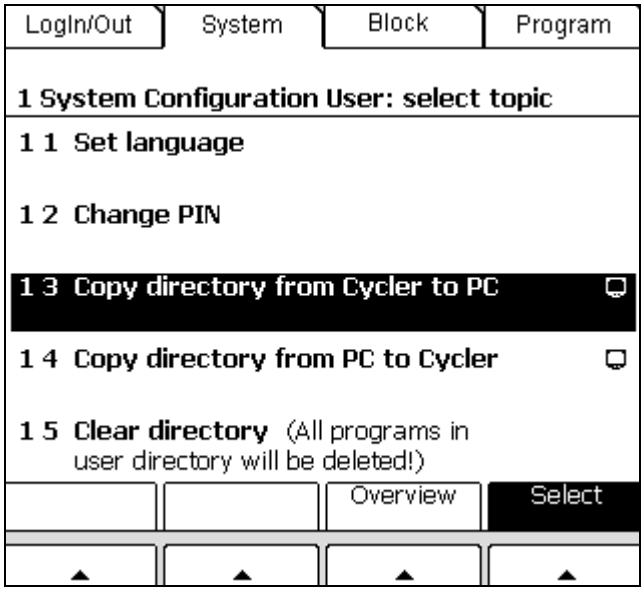
The TProfessional Manager Software allows to copy user directories saved on the PC or saved on the TProfessional Thermocyclers.

6.7.1 Copy directories from Cycler to PC

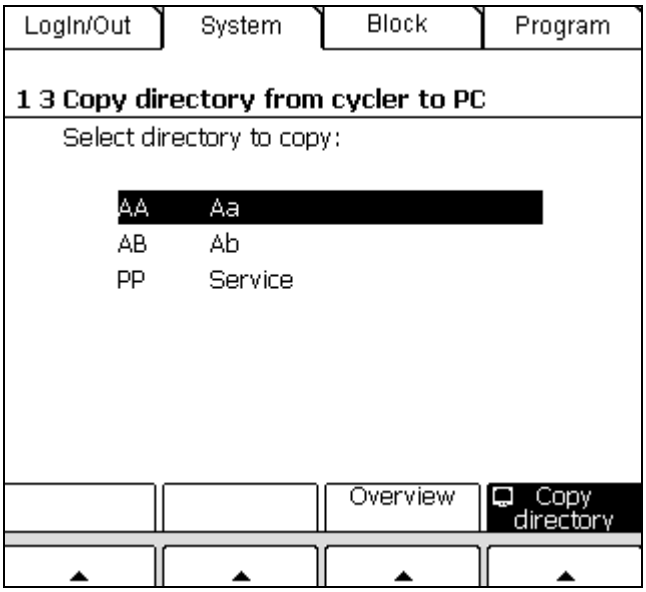
Select the TProfessional Thermocycler from where the directory shall be copied in the “Cycler View” window. The field for the actively addressed Thermocycler appears with a white background:

Note: You can only copy directories from Thermocyclers to the computer that are connected to the computer and addressed by the Manager Software.

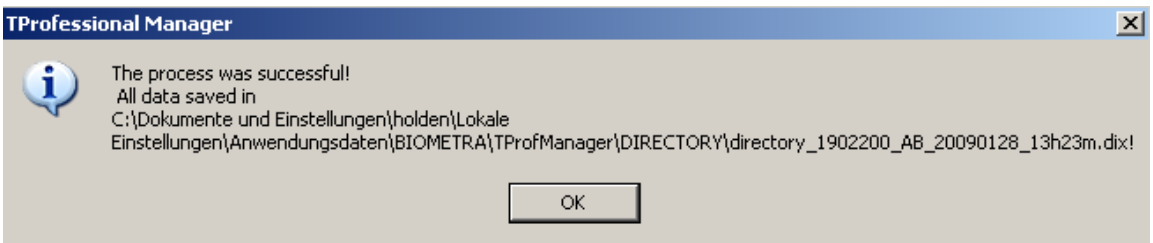
Click on the menu button [System] in the menu bar of the TProfessional Manager user interface. From the systems menu select item 1 [User Configuration] and activate subitem 1.3. [Copy directory from PC to Cycler]:


LogIn/Out
System
Block
Program
1 System Configuration User: select topic
1 1 Set language
1 2 Change PIN
1 3 Copy directory from Cycler to PC
1 4 Copy directory from PC to Cycler
1 5 Clear directory (All programs in user directory will be deleted!)
Overview
Select

Click on [Select], select the appropriate directory and click on [Copy directory]:

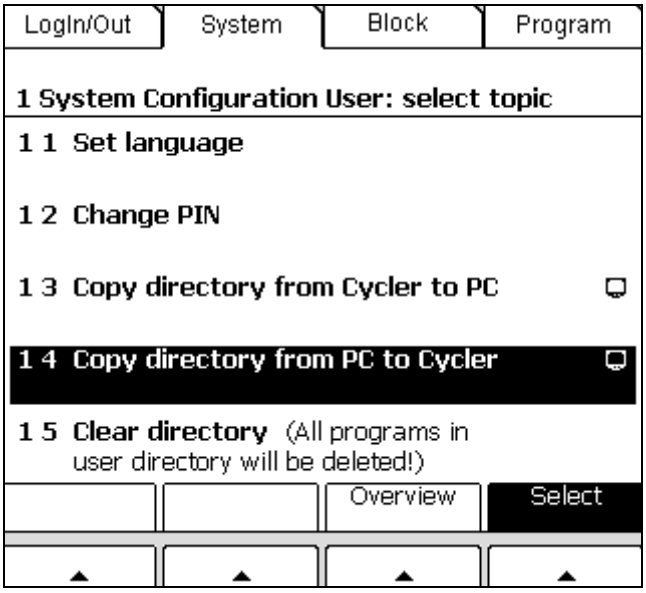


The selected directory is copied by the TProfessional Manager into the preset, non-changeable folder “Directory” to the PC. After successful file transfer the following message is displayed:

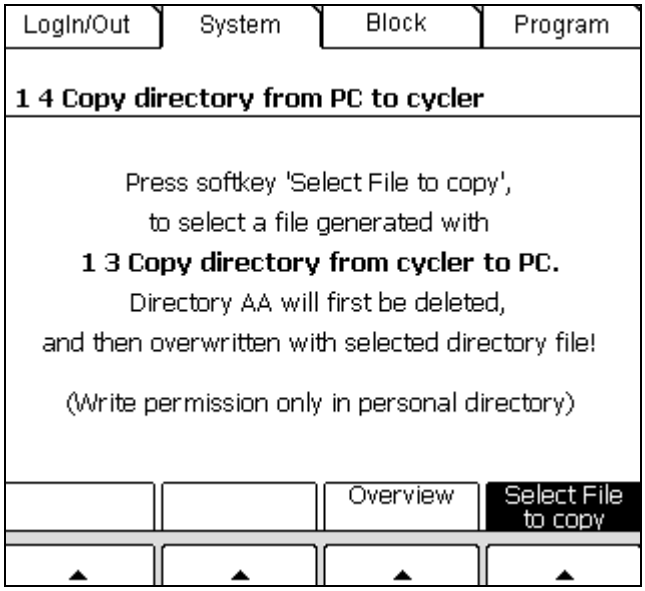


6.7.2 Copy Directories from PC to Cycler

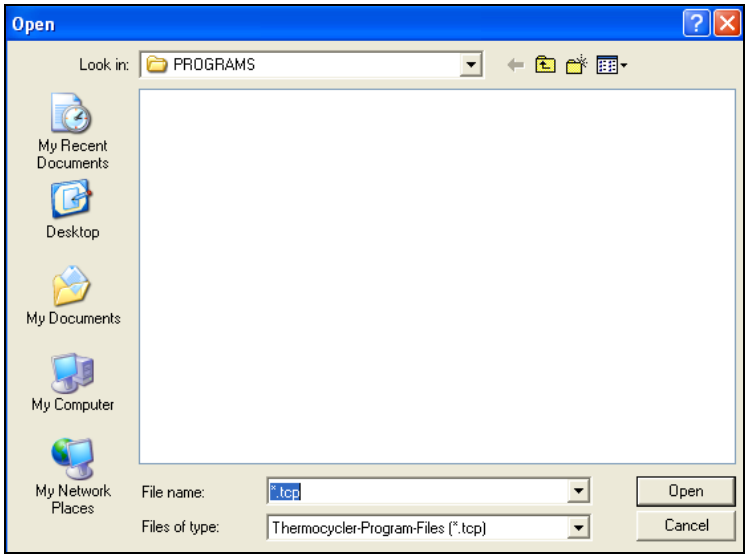
Click on the menu button [System] in the menu bar of the TProfessional Manager user interface. From the systems menu select item 1 [User Configuration] and activate subitem 1.4. [Copy directory from Cycler to PC]. Click on [Selection]:


LogIn/Out
System
Block
Program
1 System Configuration User: select topic
1 1 Set language
1 2 Change PIN
1 3 Copy directory from Cycler to PC
1 4 Copy directory from PC to Cycler
1 5 Clear directory (All programs in user directory will be deleted!)
Overview
Select

Click on [Select File to copy] in the next window.


LogIn/Out
System
Block
Program
1 4 Copy directory from PC to cycler
Press softkey 'Select File to copy',
to select a file generated with
1 3 Copy directory from cycler to PC.
Directory AA will first be deleted,
and then overwritten with selected directory file!
(Write permission only in personal directory)
Overview
Select File to copy

A new window opens and displays the available directories of the user that is logged in to the PC. Select the directory to copy and confirm by clicking on the button [Open]. The TProfessional Manager copies the contents of the selected directory into the user directory of the logged-in user. During this process existing programs at first are deleted and then replaced by the programs of the selected PC directory.



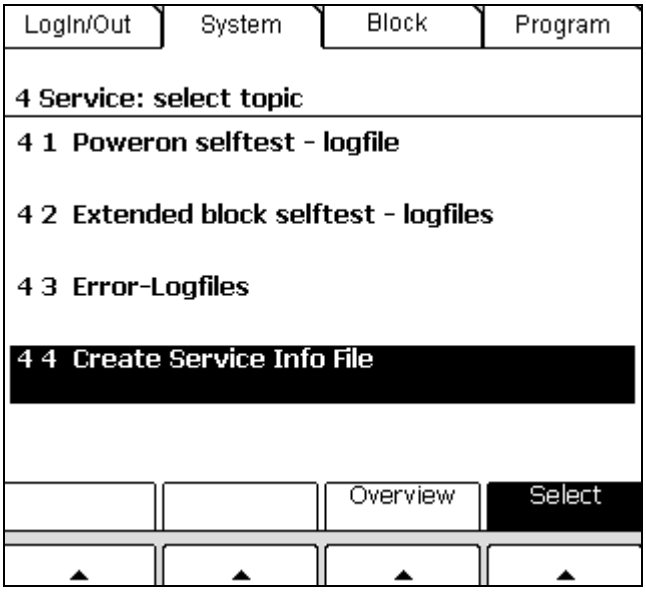
Note: As for the Thermocyclers the logged-in user can only edit and delete his own directory and programs. The user can open and copy but not edit or delete other directories and programs. When directories and programs are copied, only the directory of the user who is logged-in at a Thermocycler become modified, other directories will not be overwritten.

Note: If a directory is saved on several different Thermocyclers, programs, if necessary, will be adapted to the corresponding block type or cycler type.

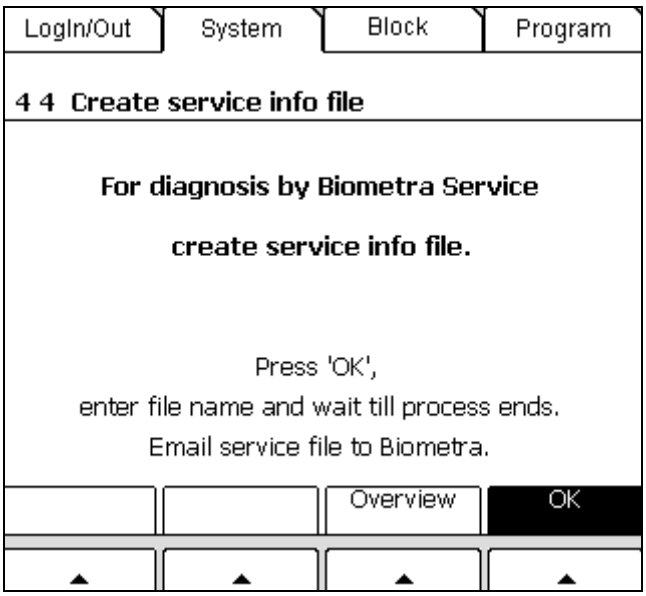
6.8 Create Service Info File

Service Info File contains useful technical data for remote diagnosis and can be sent for readout to the Biometra Service Department.

To create a Service Info File click on the menu button [System] in the menu bar of the TProfessional Manger user interface. Form the systems menu select item 4 [Service] and activate subitem 4.4. [Create Service Info File]:

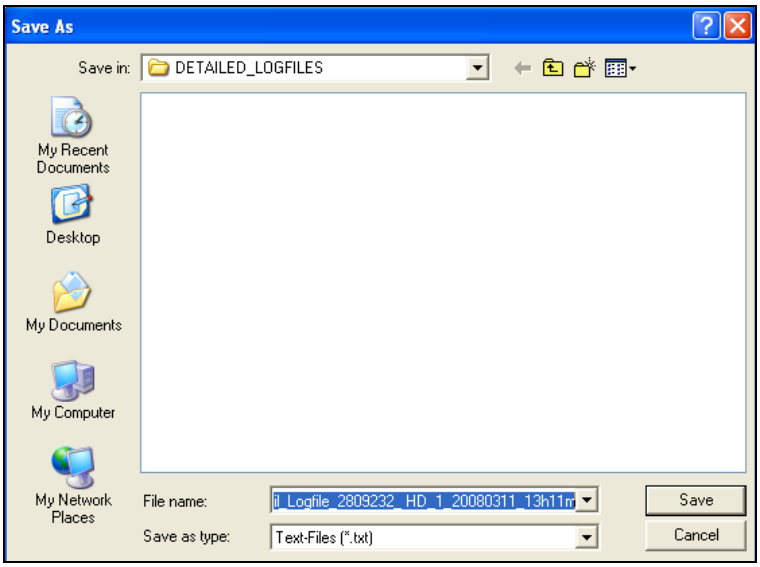


The following message will be displayed in the TProfessional Manager user interface:



By activating the check box [SINF] in the status view of the “Cycler View” window you can select for which Thermocycler a Service Info File will be saved.

To conform your selection click on [OK] in the TProfessional Manager user interface. Subsequently the “Save as” windows opens. Enter a name in the field [File name] for the file to be saved and click on [Save].



Send the file to the Biometra Service Department (service@biometra.de). The file is saved in the path <User Files/TProfManager/V100/Detailed_Logfiles> on the computer.

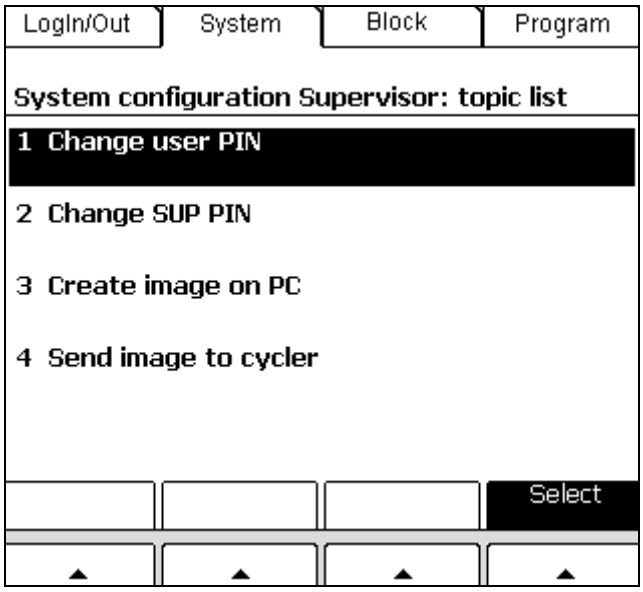
6.9 Language settings

To set the system language select [System] in the TProfessional Manager operating interface. In the system menu activate [User configuration] and menu item 1.1. [Select language] an. You can choose between German and Englisch.

Note: Only the language of the TProfessional Manager programming interface is changed (see also chapter 4). The language for the menus and operating interface are not affected. The language setting for the Thermocyclers has to be done at the instruments.

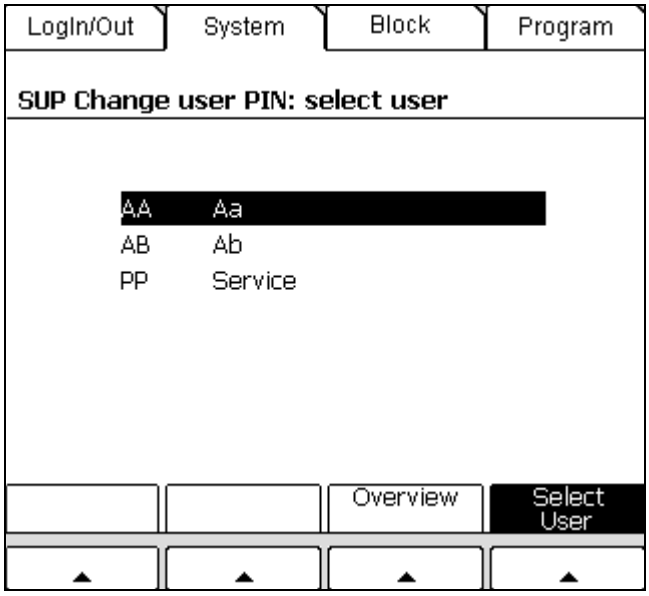
6.10 Supervisor System Menu

The supervisor has access to an own system menu with some specific functions.

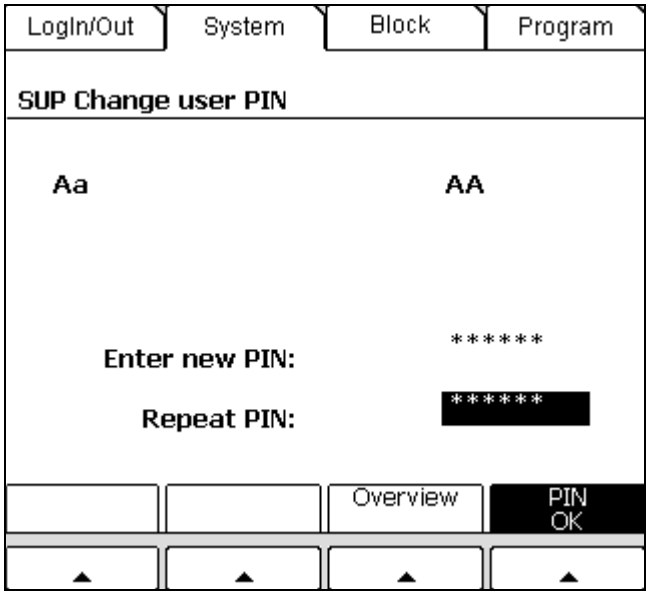


6.10.1 Change user PIN

The supervisor can change the PIN for each user account. Select a user directory from the list and press [Select User]:



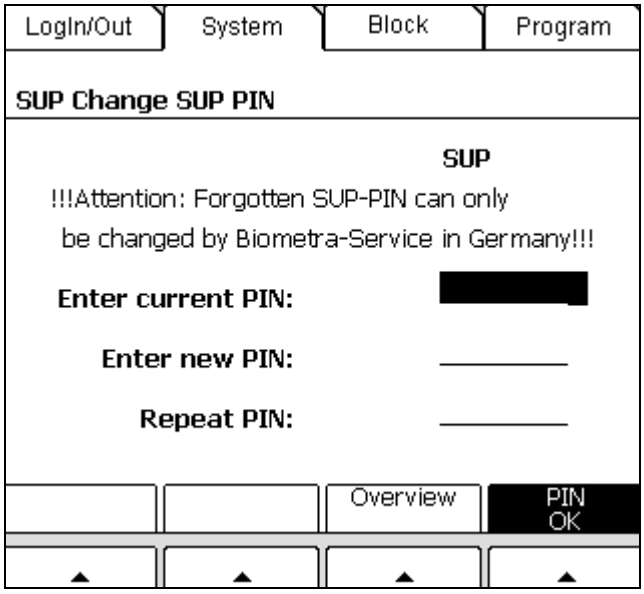
Enter a new PIN and confirm with [PIN OK]:



By activating/deactivating the check box [Change PIN] in the status view of the "Cycler View" window you can select at which Thermocyclers the user PIN will be changed:

6.10.2 Change supervisor PIN

Enter your actual PIN (the default Supervisor PIN is 000 000 0 (do not enter blanks)), enter your new PIN and repeat your input.



Confirm with [PIN OK] in the „Cycler Manager“ window.

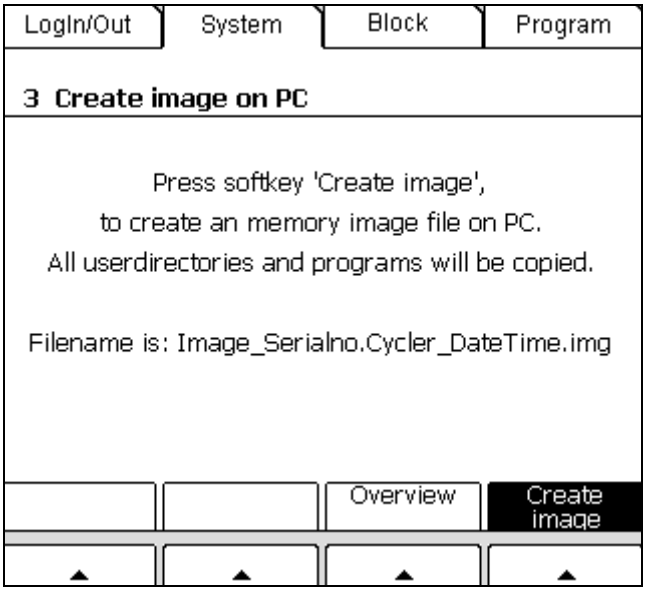
By activating/deactivating the check box [Change PIN] in the status view of the “Cycler View” window you can select at which Thermocyclers the superuser PIN will be changed:

Note: Please make a note of the Supervisor PIN und keep it on a safe spot. **A forgotten Supervisor PIN can only be reset by the Biometra Service Department and requires to send back the instrument.**

6.10.3 Create Image File

This function allows to copy all folders of a TProfessional Thermocycler. The content of all user directories and programs therein will be stored in a file on the PC.
Select the TProfessional Thermocycler for that an Image File shall be created in the window „Cycler View“. The field for the actively addressed Thermocycler appears with a white background:

Note: You can only create Image Files for Thermocyclers that are connected to the computer and addressed by the Manager Software if you are logged-in as supervisor (see chapter 6.2).



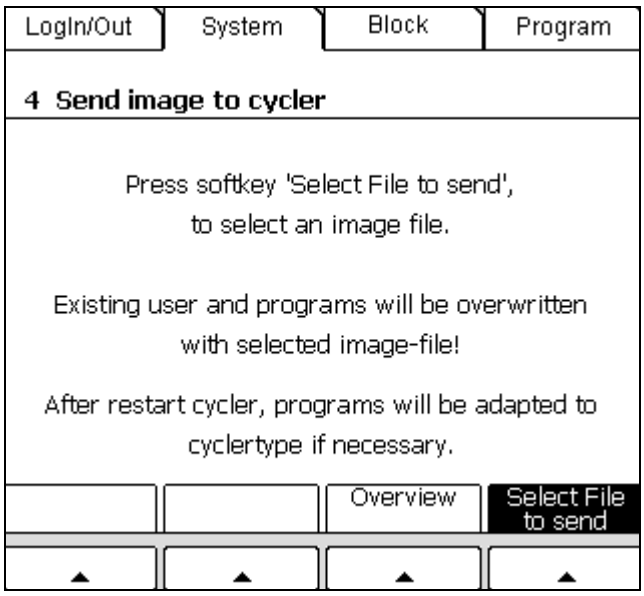
To create an Image File confirm by clicking on „Create image“. The file will automatically be stored in a special folder on the PC. All Image Files are stored with the date and time when they have been created.

6.10.4 Send Image to Cycler

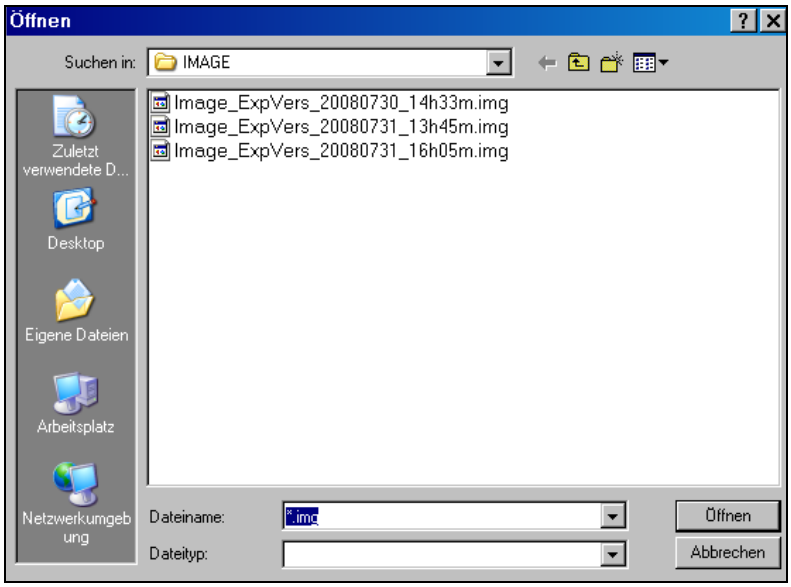
By sending an Image file to a TProfessional Thermocycler stored user directories and programs become transmitted. Prerequisite is the existence of an Image file created afore (Chapter 0).

In the window „Cycler View“ select the TProfessional Thermocycler to that an Image File shall be send. The field for the actively addressed Thermocycler appears with a white background:

Note: You can only send Image Files to Thermocyclers that are addressed by the Manager Software.



In the next window click on „Select File to send“. The window “Open” appears:



Select the Image File to be send and confirm your selection by clicking on „Open“. The selected Image File will be send to the TProfessional Thermocycler.

Note: During the transfer of an image file first the complete memory is deleted and then the data of the image file is transferred.

Note: If necessary programs will be adapted the specific type of Cycler. For example heating and cooling rates may be adapted if programs are transmitted from a TProfessional or TProfessional Standard Thermocycler to a TProfessional Basic Thermocycler. Accordingly gradient protocols become adapted if these are transmitted from a gradient enabled TProfessional Thermocycler to a non-gradient Thermocycler. The temperatures at this step will normally be set to the middle temperature of the gradient.
Please check the transmitted protocols and if applicable adapt them to your specific needs.

7 Troubleshooting guide

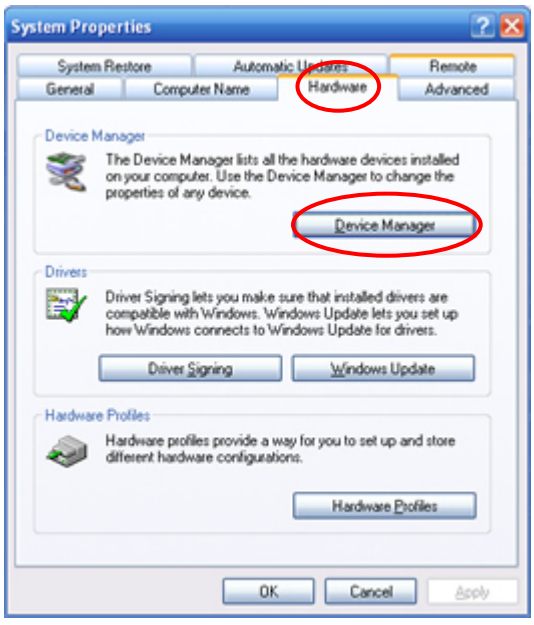
7.1 Check configuration of serial ports at the computer

Most computers have one serial port that is installed as COM port 1. Depending upon the individual configuration of the computer, some additional true or virtual COM ports may be added, that are registered after COM port 1 by the system. During the installation of an internal PCI serial card or an external serial hub (see chapter 3.3), the newly installed COM ports become automatically numbered by the computer. Depending upon the number of already occupied serial ports, the newly added serial ports become ordered by the following next free numbers.

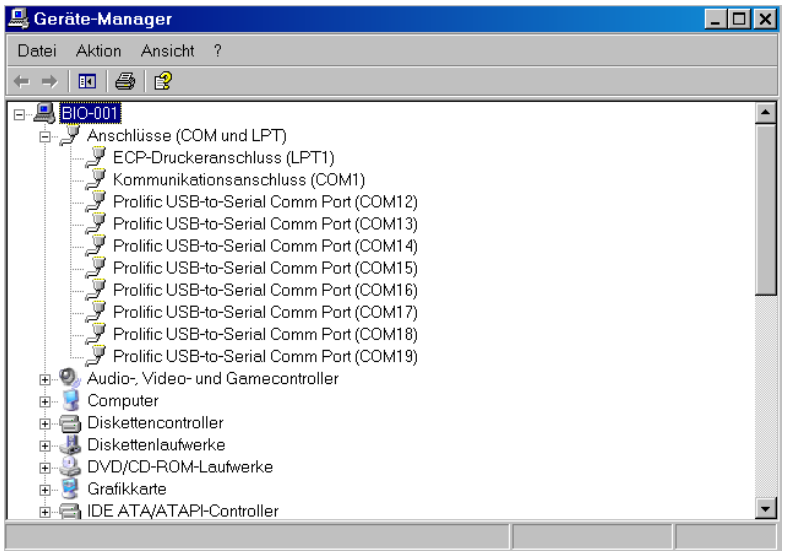
Note: If serial serial adaptors become installed via USB, for each USB port the added serial ports will be recognozied as new by the Windows™ Plug&Play function and will be installed with new numbers. If the USB port was repeatedly changed, the serial ports will be installed with numbers higher than 16 by the system and can no longer addressed by the TProfessional Manager Software. Connect the adapter to USB port that has been used at first.

The numbering of serial ports is different between single computers und single USB ports. The Setup menu of the TProfessional Manager Software offers only displays active COM-ports and therefore offers some help to select the appropriate serial ports (see also chapter 5.1).Serial ports that are not installed at the computer appear greyed out and are not selectable.

To check the configuration of the serial ports at the computer activate the menu item <System control> under <Settings> in the Windows™ start menu. The window “System Properties” opens:


System Properties
System Restore
Automatic Updates
Remote
General
Computer Name
Hardware
Advanced
Device Manager
The Device Manager lists all the hardware devices installed on your computer. Use the Device Manager to change the properties of any device.
Device Manager
Drivers
Driver Signing lets you make sure that installed drivers are compatible with Windows. Windows Update lets you set up how Windows connects to Windows Update for drivers.
Driver Signing
Windows Update
Hardware Profiles
Hardware profiles provide a way for you to set up and store different hardware configurations.
Hardware Profiles
OK
Cancel
Apply

Activate the register <Hardware> and click on the button <Device-Manager>. The new window „Device-Manager“ opens. At <Ports (COM & LPT)> you get a list with the numbering of the serial ports installed by the Windows™ system:



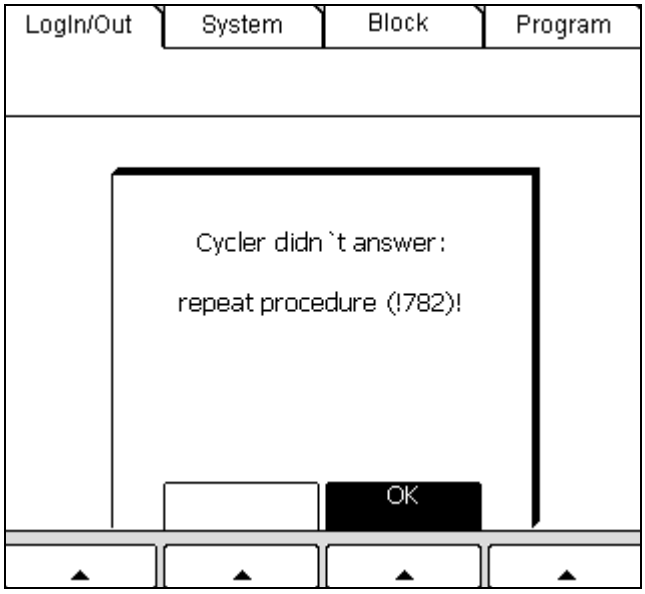
To get detailed information select the specific port by a double click:

If an external serial hub is used, the newly installed serial ports are assigned as „USB-to-Serial Comm Port“ by the system. Make a note of the numbering of the installed serial ports and activate the corresponding ports in the setup menu of the TProfessional Manager Software (see chapter 5.1).

Note: The TProfessional Manager Software can address up to COM port 16.

7.2 Error code 782

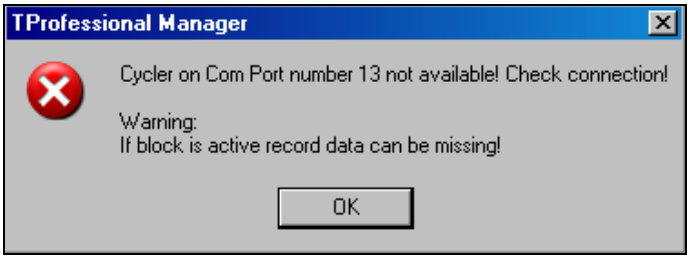
While connecting TProfessional Thermocycler to the computer you may get a message with error code 782: „*Cycler didn't respond: Repeat procedure (!782!)*“:



This message occurs if the serial communication to one or several Thermocyclers cannot be established. This may happen if the [Connect] button in the “Cycler View” window has been clicked (see chapter 5.2), while at least one Thermocycler has not yet passed the initial self test completely. Since the Thermocycler is still busy the connection initiation fails. The TProfessional Manager Software then is waiting for a serial signal from the Thermocycler and is in loop process. The program will not react to user input for 2 minutes. Please do not close the software and do not switch off the Thermocyclers. Wait for 2 minutes and start the connection initiation by clicking the [Connect] button again (see chapter 5.2).

7.3 Message: „Cycler on COM Port not available!“

If a serial port is selected that is installed at the computer and entered in the Windows™ registry but no TProfessional Thermocycler is connected to (or if the Thermocycler is switched off or not ready) to the following message is shown:


TProfessional Manager
Cycler on Com Port number 13 not available! Check connection!
Warning:
If block is active record data can be missing!
OK

Make a note for all of COM-ports for that the error message has occurred. Ensure that all TProfessional Thermocyclers are switched on and have passed the initial check-up. Inactivate all serial ports in the [Setup] menu (see chapter 5.1) for that you have received the error message and reconnect the remaining serial ports by clicking on the [Connect] button in the „Connect/Disconnect“ window of the Cycler View screen. The network is installed now and all Thermocyclers can be addressed.

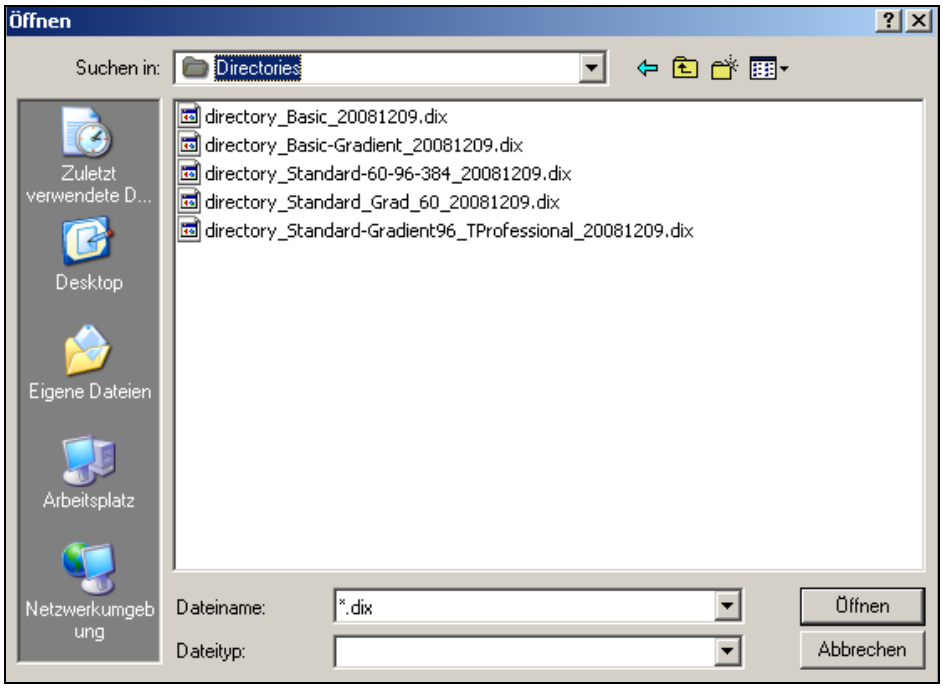
8 Biometra Shared directory

Since January 2009 all TProfessional Thermocyclers are delivered with preinstalled PCR protocols. These are located in the directory Biometra Shared. If you would like to transfer the sample protocols to instruments delivered before this date, you can use the TProfessional Manager Software. Either the complete directory including all programs or selected programs can be transferred, presupposed during the setup of the TProfessional Manager Software the directories respectively the programs have been installed to the computer (see chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**).

8.1 Transfer of the complete directory including all programs

At the Thermocycler create a new user directory “Biometra Shared“ and log in to this directory. Transfer the data to the instrument by using the function “Copy directory from PC to Cycler” (see chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**).

Note: The standard installation folder of the Biometra Shared directories is: C:\Programs\ Biometra\TProfessionalManager\BiometraShared\Directories. Be aware to choose the appropriate directory corresponding to the TProfessional Thermocycler the directory will be installed to:



a) TProfessional Basic: „directory_Basic_20081209.dix“
b) TProfessional Basic Gradient: “directory_Basic-Gradient_20081209.dix”
c) TProfessional & TProfessional Standard: “directory_Standard-60-96-384_20081209.dix”
d) TProfessional &:TProfessional Standard Gradient 60: “directory_Standard_Grad_60_20081209.dix”
e) TProfessional &:TProfessional Standard Gradient 96: “directory_Standard_Gradient96_TProfessional_20081209.dix”

Note: The programs of the selected directory are copied from the PC to the Thermocycler directory of the user who is currently logged in to the instrument. At first all programs in the

directory are deleted and then the protocols of the selected PC directory are transferred. Please make sure that you are not logged in to a user directory that must not be overwritten!

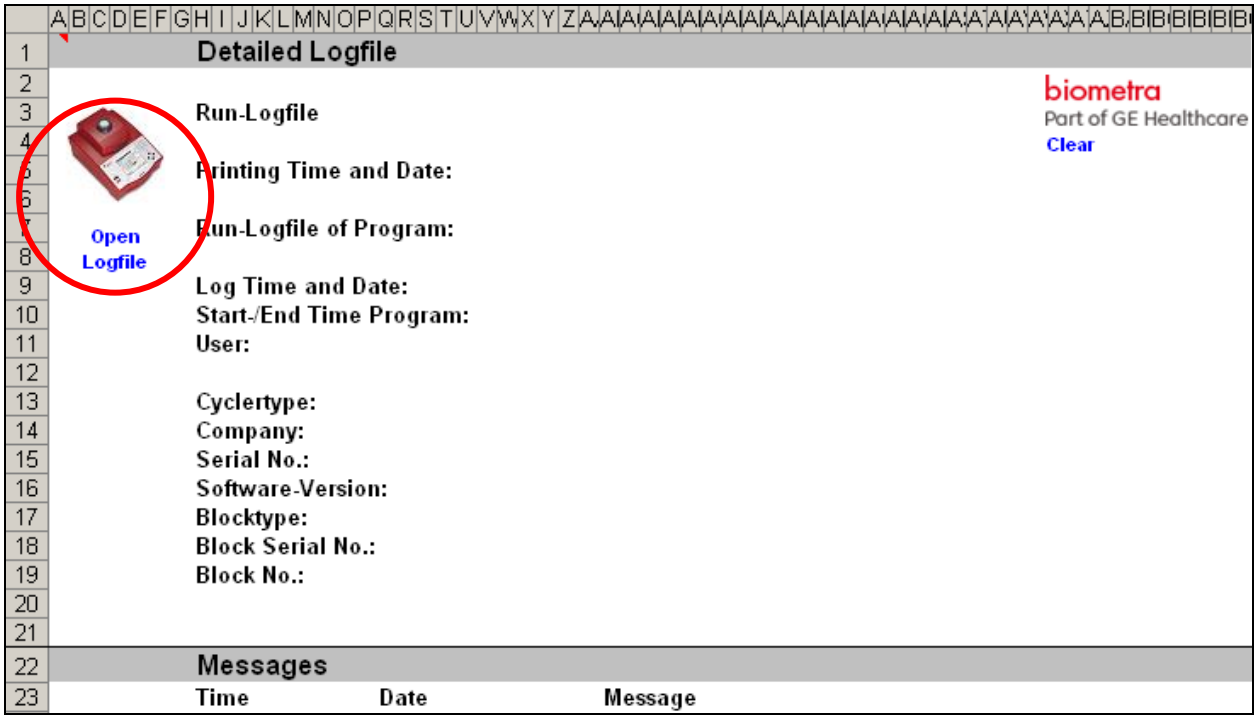
8.2 Transfer of selected programs

At the Thermocycler log in the user directory in which the programs are going to be copied. Open the PC directory where the programs are installed. The standard installation path is: C:\Programs\Biometra\TProfessionalManager\BiometraShared\Programs\. At the PC choose the appropriate folder corresponding to the Thermocycler (see also chapter 8.1). Select a single program from the folder and open it. Click on “Save/Save as”, select a store number and click on “Save on Cycler”. Repeat this procedure for each single program.

9 Analysis of Detailed Log Files

For the analysis of Detailed Log Files by Microsoft™ Excel the file "Temperature_profile_V113.xls" has to be installed (see chapter 3.4). The Excel file allows the readout of temperature data and the graphical display of Detailed Log Files.
Open the Excel file „Temperature_profile_V113.xls".

Note: During the installation the file is copied into the folder C:\Programs\Biometra\ TProfessionalManager\ unless another installation folder has been chosen during the setup (see chapter 3.4).



To open a Detailed Log File click on „open Logfile" and choose the appropriate file.

Note: Detailed Log Files are saved to a user specific folder by the computer. The files are stored to the directory „My Documents" of the user that is currently logged in to Windows™. The files are located in the following folder: My Documents\BIOMETRA\TProfManager\LOGFILES\ DETAILED_LOGFILES

The Excel file is divided into three sheets:

a) Logfile-Data
b) Temperature-Data
c) Temperature-Curve

a) The sheet „Logfile Data" displays Log File data, messages that have been recorded during the run and the used PCR program:

Detail_Logfile_2908141_ AA_1_20080926_11h39m.txt

biometra
Part of GE Healthcare
Clear

Open Logfile

Run-Logfile

Printing Time and Date:	11:40	26.09.08
Run-Logfile of Program:	AA 01 testlogfile	
Log Time and Date:	11:44	26.09.08
Start-/End Time Program:	11:44 - 11:44	26.09.08
User:	AA Pc-User	
Cyclertype:	TProfessional Standard	
Company:	Biometra	
Serial No.:	2908141	
Software-Version:	0330 - 1.30 - 1.30 - 1.20tpr	
Blocktype:	96 well	
Block Serial No.:	20081868	
Block No.:	1	

Messages

Time	Date	Message	
11:44	26.09.08	772	Program on block 1 manually stopped

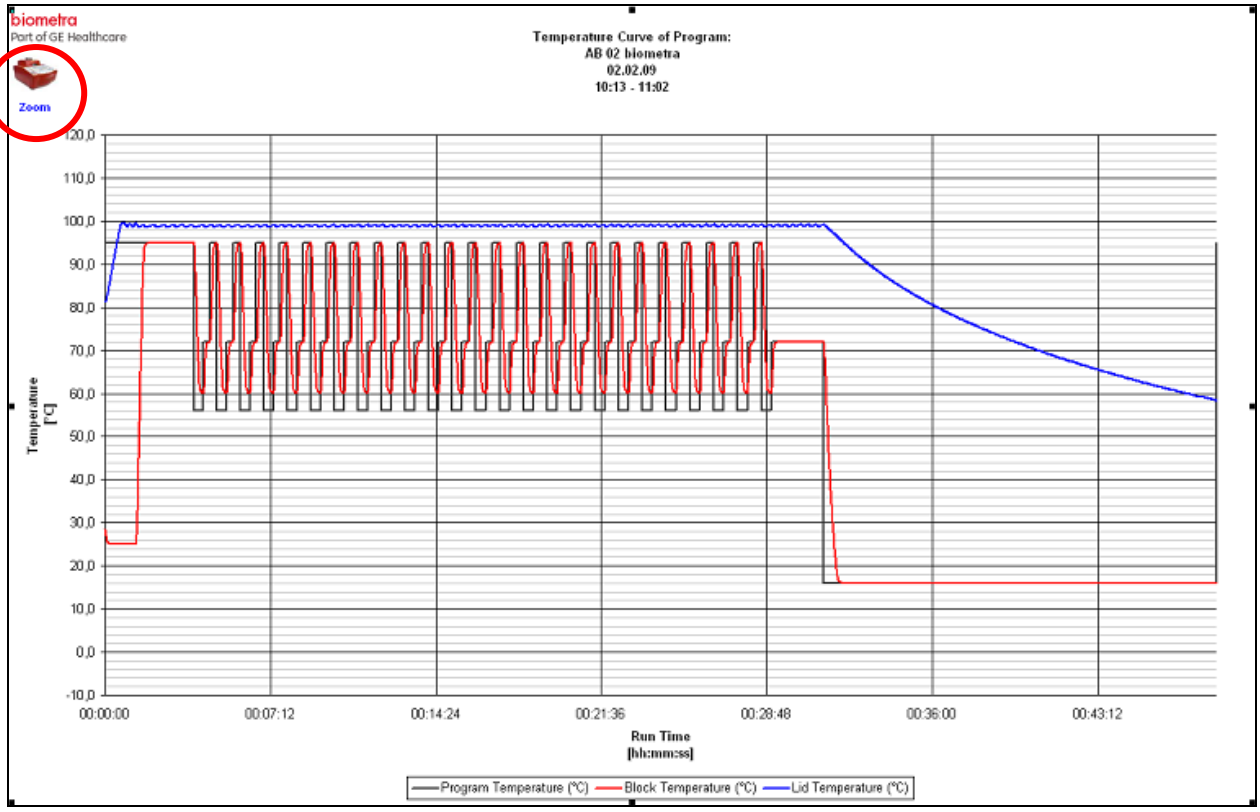
Temperature-Program

View program:	AA 01 testlogfile	(26.09.08)
Blocktype:	96 well	
Preheat Lid:	ON 99 °C	
Steps:	30	

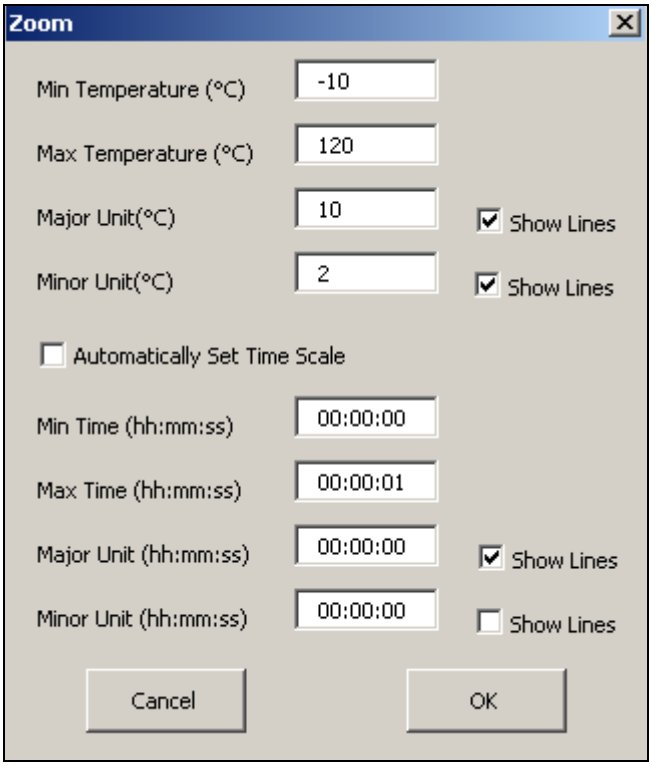
Step	°C	m:s	Goto	Loops	T°C	t(s)	°C/s
01	25.0	00:05	00	00	0.0	00:00	5.0
02	33.4	00:05	00	00	0.0	00:00	5.0
03	86.0	00:05	00	00	0.0	00:00	5.0
04	86.0	00:05	00	00	0.0	00:00	5.0

b) In the sheet „Temperature Data“ each second data for the programmed temperature, the block temperature and lid temperature are recorded.

c) The sheet „Temperature Curve“ gives a graphical presentation of the recorded temperature data:



By the function „Zoom“ the display of the temperature curves can be optimized. Click on „Zoom“, a new window opens. Change the settings of specific parameters to optimize the display.



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